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German Democratic Republic

REPORT ON SACHSEN-ANHALT FOOD INDUSTRY (157 pp;

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This document is a photostatic copy of a comprehensive report on the food industry of Land Sachsen-Anhalt. Dated July 1949, the report covers the period from 1945 and was prepared by the Ministry for Trade and Supply, Main Division for the Food Industry and Fisheries, Halle (Saale). All information is given in both German and Russian.

A foreword, dated 1 September 1949, and signed by the permanent secretary of the Ministry, refers to the bountifulness of Sachsen-Anhalt, its coal deposits, fertile fields, and countless factories, its excellent transportation facilities and favorable location in the heart of Germany. It further states that over one-half of the food and beverage enterprises of the GDR are located in Sachsen-Anhalt, and that this branch of industry represents over one-third of the entire industrial potential of that Land.

The report covers seven divisions of the food industry, as follows:

- (1) Sugar and Confectionery Industry  
(sugar refinery products, chocolate, candy, biscuits, flavorings and extracts, etc.)
- (2) Milk, Fat, and Meat Industry  
(dairy products, margarine, seed oils, etc.)
- (3) Fruit and Vegetable Processing Industry  
(canned fruits and vegetables, preserves, vinegar, table mustard, fruit juices, etc.)
- (4) Grain Processing Industry  
(flour, oatmeal, groats, edible pastes, ersatz coffee, malt, etc.)
- (5) Beverage Industry  
(beer, non-alcoholic beverages, wine, liquor, etc.)
- (6) Potato and Molasses Processing Industry  
(potato starch, pudding powders, dextrin, glucose, dextrinized potato flour, crude spirits from potatoes and cellulose, yeasts, etc.)
- (7) Tobacco Industry  
(smoking tobacco, cigars, cigarettes, snuff, chewing tobacco)

In what appears to be a conscientiously prepared survey of the food industry, considerable data -- statistical (figures for both quantity and value), graphic, and photographic -- are provided for each of the seven industrial sub-divisions. The report utilizes photographs of factories, machines in operation, various steps in manufacturing processes, and sanitary installations and rest rooms for workers. Maps show the location of factories in Sachsen-Anhalt. Detailed diagrams picture entire manufacturing processes as well as individual operations of certain units. Statistical tables on production, raw material and transportation requirements, manpower, and 1949 figures under the Two-Year Plan help complement the report.

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Report on the Food Industry  
in Land Sachsen-Anhalt  
since 1 9 4 5

Section I: The Sugar and Confectionary Industry

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**ECONOMIC SITUATION: Sugar Industry, Fourth Quarter, 1948**

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	Unrefined Sugar Factories	White Sugar Factories	Refineries
Industrial plants	35	12	3
Number of workers	12,316	7,311	2,302
Production in tons	26,928	13,436	—
in 1,000 DM	1,184	591	--
Capacity in tons	26,000	13,400	--
in 1,000 DM	1,144	589	--
Percentage utilization of capacity	103	100	

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**TRANSPORT OF SUGAR BEETS**  
(in percentage)

	By Water	By Cart	By Truck	By Rail
1938	3.5	35.4	15.3	45.8
1945 <sup>5</sup>	3.2	48.6	20.4	27.8
	<del>3.2</del>			
1946	2.9	41.1	22.8	33.2
1947	2.4	36	20.5	41.1
1948	3.26	33.43	23.04	40.27

**SUGAR BEET PROCESSING** (in tons)

	Into Sugar	Into Sugar Beet <del>Cane</del> <i>Cane</i>
1938	3,483,333	646,467
1945	2,675,738	48,015
1946	2,408,454	728
1947	1,481,835	2,234
1948	2,759,590	137,942

**PRODUCTION** (in tons)

	Unrefined Sugar	White Sugar
1938	329,840	186,802
1945	274,489	116,040
1946	272,912	99,052
1947	148,245	82,531
1948	291,347	142,820

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THE SUGAR INDUSTRY IN LAND SACHSEN-ANHALT

	Sugar Content of Beets (percentage of beets)	Sugar Yield of Beets (percentage of beets)
1938	16.9	14.29
1945	17.9	15.18
1946	17.2	14.99
1947	17.7	15.07
1948	17.76	15.26

Sugar Losses

	In Molasses	Losses In Processing
1938	1.56	1.05
1945	1.25	1.47
1946	1.16	1.04
1947	1.64	1.03
1948	1.28	1.23

Daily Production of White Sugar

(in tons)

1938	8,419
1945	6,794
1946	5,207
1947	5,115
1948	5,974

Area under Cultivation  
(in Hectares)Yield per Hectare  
(in tons)

1938	135,040	29.66 296.6
1945	135,287	21.74 217.4
1946	105,769	22.14 221.4
1947	110,616	12.95 129.5
1948	111,795	24.15 241.5

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Raw materials, fuel, and auxiliary materials used by the sugar industry:  
(for a cultivated area of 116,000 hectares)

Coal requirements:	1,150,000 tons
Briquette requirements:	13,100 tons
Coke requirements:	16,900 tons
Sugar beet yield:	2,500,000 tons
Limestone requirements:	139,200 tons
Filtering cloth requirements:	350,000 square meters
Burlap requirements:	5,700,000 square meters

Production: white sugar to fill two trains 100 kilometers long  
wet pulp ~~XXXXXXXXXX~~ to fill two trains 100 kilometers long  
dry pulp to fill one train 90 kilometers long  
molasses to fill one train 50 kilometers long

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LABOR STATISTICS OF SUGAR FACTORIES IN LAND SACHSEN-ANHALT, 1948-49

Aktendorf  
 Alsleben  
 Aschersleben  
 Beudendorf  
 Brottevitze  
 Dedeleben  
 Dersenburg  
 Droebe  
 Ederitz  
 Eisleben  
 Eruborn  
 Gatersleben  
 Gross Oterhausen  
 Hadmersleben  
 Halberstadt  
 Haldensleben  
 Hecklingen  
 Helmedorf  
 Hesse  
 Kleinwanzleben  
 Langenhagen  
 Leebefu  
 Lützen  
 Niederndodeleben  
 Nordgermersleben  
 Oertröblingen  
 Prosig  
 Reinstedt  
 Reitzsch  
 Schackensleben  
 Tenschenthal  
 Wittenburg  
 Weferlingen  
 Wolmirstedt  
 Wulfen  
 Goldbeck  
 Hestensleben  
 Osterwieck  
 Salzwedel  
 Aderstedt  
 Alleringersleben  
 Artorn  
 Elsnigk  
 Gendhin  
 Hossleben  
 Zeitz  
 Oschersleben

Explanation:

-hour  
 Manpower requirements  
 for 1,000 tons of sugar  
 beets

Sugar content of sugar  
 beets

Indeterminable losses  
 (percentage of sugar beets)

Sugar content of molasses  
 (percentage of sugar beets)

Polarization yield  
 (percentage of sugar beets)



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**Production-~~fulfillment~~ of the sugar industry:**  
**(in Deutsche marks)**

*p.15*

	Capacity	Quota	Production
1946/47	243,000,000	210,340,000	186,980, <sup>960</sup> <del>000</del>
1947/48	243,000,000	127,650,000	116,637, <sup>300</sup> <del>000</del>
1948/49	243,000,000	173,070,000	218,689,740

**Production ~~fulfillment~~ of the sugar industry:**  
**/tons of/**  
**(in/white sugar)**

*p.16*

	Capacity	Quota	Production
1946/47	450,000	371,000	346,224
1947/48	450,000	236,400	215,995
1948/49	450,000	320,500	404,981

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## THE SUGAR INDUSTRY IN LAND SACHSEN-ANHALT

Each year during the working season in Germany 148 raw and white sugar factories are engaged in processing the sugar beet crop. Seven refineries process the unrefined sugar into "white gold".

After the partition of Germany, 69 raw and white sugar factories and four refineries remained in the Soviet Zone of which 47 factories and three refineries are in Sachsen-Anhalt, the leading land in sugar production. Sachsen-Anhalt supplies sugar to other laender of the ~~The~~ Soviet Zone ~~and for export purposes~~ and for export purposes which in return makes possible the import of vital products.

The Halle Sugar Refinery, with a daily processing capacity of approximately 650 tons is the largest refinery in Land Sachsen-Anhalt. The Zeitz Sugar Factory, which processes 2,200 tons of sugar beets daily, is the largest white sugar factory. During the last working season the Klein-Wanzleben Sugar Factory led all other raw sugar factories by processing over 1,900 tons of sugar beets daily. The Reinstedt Raw Sugar Factory, the smallest sugar factory in the land, processes 200 tons a day. The daily sugar beet processing capacity for the whole Land Sachsen-Anhalt amounts to approximately 40,000 tons. Sugar production per working day is about 6,000 tons of raw sugar. The sugar industry employs 22,000 trained factory and office workers.

Normal losses in factories producing raw sugar are between 2 and 2.35 percent and in factories producing white sugar between 2.75 and 3.05 percent

The Ochserleben White Sugar Factory uses the "Steffen" method in processing sugar beets and obtains a pulp ~~Ex~~ [1] residue with 2.5 percent sugar content which is used for forage. Sugar losses thus rise to 4.85 percent.

The transport of sugar beets dominates the whole traffic picture during the working season. Carts, trucks, trains, and boats are all used in transporting the sugar beet.

Prepared traffic plans govern the transport of the sugar beet and ensure smooth and prompt operation during the working season.

## Production of Sugar

Upon reaching the factory, the sugar beets are placed in rinsing basins, and the percentage of dirt is determined. Then they are washed clean and conveyed by elevators to automatic scales and slicing machines, where the sugar content from which the yield is calculated is also determined. The extraction of sugar from the <sup>slices</sup> cossettes is done in the diffusion process. The beet slices are then

~~beet slices~~ pass through measuring tanks, defecating pans, saturators, ~~beet presses~~, mashes, to the evaporating station. After the syrup has been thickened in the evaporation station, ~~then~~ it is crystallized at the vacuum station (Vakuumstation). The crystallized filler then goes into centrifuges, where the sugar is separated ~~is~~ from the syrup, then dried and packed.

Whereas white sugar factories process sugar beets directly into white sugar, the sugar manufactured by raw sugar factories must be re-processed at refineries. The Dessau Sugar Refinery, which formerly was used exclusively for the extraction of sugar from molasses, is now engaged in processing

raw and white sugar. <sup>However,</sup> ~~the~~ molasses is used now exclusively for the extraction of spirits. *It is the only plant in the world which has the facilities for extracting sugar from molasses.*

In Land Sachsen-Anhalt about 100,000 persons are engaged in the cultivation of sugar beets on an area of over 110,000 hectares. The ~~harvest~~ crop yield is about 2,500,000 tons.

Sugar beet cultivation ~~provides~~ <sup>is a source of sugar of</sup> not only ~~sugar~~ but ~~considerable~~ <sup>considerable</sup> amounts of forage vital to rebuilding ~~our~~ <sup>the</sup> livestock herd. <sup>Thus, valuable forage</sup> ~~without using~~ additional land. The yield of beet (leaves) greens corresponds to maximum meadow hay crops from the same amount of land.

The sugar beet crop from 10,000 hectares amounts to approximately 320,000 tons which yield the following:

Sugar	42,000 tons
Dry slices (pulp)	18,000 tons
Wet <del>slices</del> (corresponds to 40,000 tons of dry <del>slices</del> )	250,000 tons
Molasses	12,000 tons

*Fresh greens* (this amount of molasses represents 6,000 tons of baking yeast and 12,000 hectoliters of alcohol; if alcohol alone ~~is~~ <sup>were</sup> produced there would be a yield of 36,000 hectoliters.)

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The average yield of grain on the same area of land is about 30,000-35,000 tons, and that of potatoes, about 200,000-250,000 tons. Total yield in terms of nutritive value of grain, potatoes, and sugar beets — for the same area of land — is in the proportion 1:2:3.

In addition to the sugar factories themselves, large installations have been built for ~~processing~~ utilizing the by-products of sugar beet processing and for the canning of beet greens.

Each year considerable quantities of sugar-beet cassettes, dried pulp, and dried greens are produced for forage.

*more report.* The sugar industries of other countries <sup>are ahead of</sup> ~~are~~ the German sugar industry ~~in other countries~~ in other countries white sugar is produced in one manufacturing process, <sup>many German factories</sup> ~~whereas in~~ ~~raw sugar is~~ <sup>first</sup> produced from the sugar beets and then processed into white sugar at refineries. Naturally, the single manufacturing process is more efficient and <sup>less costly,</sup> ~~reduced~~ <sup>under the Two-Year Plan</sup> ~~must~~ <sup>must</sup>

Therefore, ~~it is necessary that~~ raw sugar factories be converted into white sugar producers. In Land Sachsen-Anhalt four raw sugar factories have <sup>(so)</sup> been converted <sup>Furthermore</sup> since 1945. ~~In addition,~~ <sup>plants</sup> the capacity of existing ~~estab-~~lishments must be increased. Land Sachsen-Anhalt will strive to fulfill the goals of the Two-Year Plan and will employ the <sup>(so-called)</sup> ~~Wofarit~~ Method which represents a basic change in the sugar industry.

*as one measure*

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The Two-Year Plan -- 1949 figures

Item	Amount in <sup>(1,000)</sup> Tons	Value in 1,000 DM
Raw sugar	296.2	127,366
White Sugar from sugar beets	125	53,750
White sugar from raw sugar	203	87,290
<i>p. 22</i> <del>Confectionery</del> Confectionery	8.1	12,636

Economic Situation of the Confectionery Industry -- Fourth Quarter, 1948

	People-Owned Plants	Privately Owned Plants
<i>p. 15?</i> Number of Confectionery enterprises:	6 <del>XXXXXXXXXX</del>	36 <del>XXXXXXXXXX</del>
Number of workers:	774	2020
Production (in tons):	230	592
Capacity (in tons):	2040	3960
Percentage utilization of capacity:	11.2	14.9

PRODUCTION TREND IN THE CONFECTIONARY INDUSTRY<sup>E</sup>

	1946				1947				1948				1949
Quarter	I	II	III	IV	I	II	III	IV	I	II	III	IV	I
Capacity in tons	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000
Percentage utilization of capacity	46.8	27.4	22.2	27.5	16	11.5	10.2	24.6	12.8	16.6	11.8	13.7	10.8
Production quotas in tons	2,600	1,528	1,300	1,700	650	650	700	2,800	700	1,000	700	1,200	500
Production in tons	2,811	1,641	1,330	1,651	962	690	611	1,480	766	994	709	822	651
a.) VERAG*	-	-	-	743	414	362	361	683	332	419	353	230	296
b.) Konsun**	-	-	-	-	-	-	-	-	-	-	-	-	-

\* Federation of People-Owned Enterprises of the Food, Beverage, and Tobacco Industries in Land Sachsen-Anhalt

\*\* Consumer cooperatives

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The Confectionary Industry

The confectionary industry comprises 42 confectionary plants which employ 2,800 workers and have a monthly capacity of about 2,000 tons. 11 of these enterprises, with a monthly capacity of 220 tons, are located in the Magdeburg city district, and seven plants, with a monthly capacity of 415 tons, are located in Halle and vicinity. With the industry so concentrated in Sachsen and Sachsen-Anhalt ~~xxxx~~ it is impossible to utilize fully all the existing plants.

Therefore, only 6 people-owned and 19 private enterprises are included in the planning of production. These ~~25~~ 25 enterprises are made up of 10 large-scale plants with over 100 employees (1 of them people-owned), 4 medium-sized plants with over 50 employees (2 of them people-owned), and 11 small plants with less than 50 employees. Of these, 4 can be considered as exclusively bonbon manufacturers, 7 as exclusively fondant manufacturers, and 11 as manufacturers of assorted products. The Diamalt AG is the most important firm in the first group, and the Mignon Chocolate Works in Bueschdorf the most important in the second. The 11 firms in the third group produce all three confections from time to time.-- bonbons, fondants, and dragees, but concentrate to some extent on a particular type of production. A number of firms like Henze K.G. in Eilenburg are manufacturers of bonbons to the same extent as the above mentioned Diamalt A.G.; The F.A. Oehler firm in Zeitz specializes in dragees. The VENAG enterprises, Halle Chocolate Works, (formerly "Most" Cocoa and Chocolate Factory) and the Oschersleben Chocolate Works (formerly Bodeta-Schmidt Sons), are especially known as fondant and dragee manufacturers, although they manufacture other candies as well. The VENAG Magdeburg Chocolate Works (formerly Portola) and the Feodora Cooperative Chocolate Factory in Tangemünde, are well-known as manufacturers of assorted confection.

Since 1945 a great number of confectionery enterprises have expanded their production program to include artificial honey, jams, jellies, etc.

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Some of these factories have also taken up the dehydration of vegetables, spices, and potatoes, as well as the manufacture of Walzmehl (milled flour) ? ~~the precipitation of whey albumen (Molkeneiweisse) ??~~

Confectionary production figures:

1938	49,063 tons
1946	7,43 <sup>3</sup> tons
1947	3,742 tons
1948	3,291 tons

The total sales value for 1938 was approximately 89,000,000 Deutsche marks; the average for the years 1946/48 was approximately 14,000,000 Deutsche marks. One of the reasons for the decline in production was the basic structural change in the industry - i.e., from cocoa processing to the exclusive manufacture of confectioneries.

The basic raw materials required for the manufacture of confectioneries are:

- Unblended sugar 99.8 percent pure
- Clear, colorless capillary syrup up to 41° Baumé (Bäume ?) (XX 80 percent

Trockensubstanz dry substance, solid matter) ?

- filler

In manufacturing bonbons, the sugar syrup is ~~manufactured~~ boiling ~~in a vacuum~~ in a ~~vacuum~~ cooker and, after cooling, is processed into bonbons by rollers, cutters, and molders. -e2

The manufacture of dragees is completely different. The pieces, shaped in automatic machines, are gradually coated with sugar syrup in tilted, rotating kettles. This type of confectionery is characterized by its rounded appearance which <sup>reveals</sup> no seam line.

~~XXXXXXXXXX~~ <sup>molding</sup>  
Fondants can be manufactured both by hand and by machines. The actual manufacturing process is followed by ~~XXXXXXXXXXXXXXXXXXXX~~ final <sup>to help preserve</sup> step ~~XXXXXXXXXXXX~~ and improving <sup>its</sup> appearance ~~the candy~~ this step consists of candying or glazing the fondants.



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THE BAKED GOODS INDUSTRYManufacture of

In comparison with the confectionary industry, the non-perishable baked goods is of minor importance. In addition to the Konsum cooperative bakeries, which manufacture some non-perishable baked goods, 13 private enterprises are engaged in such production. with a quarterly capacity of 150 tons each Three of these are medium-sized enterprises, the others small plants. Six plants produce ~~only~~ non-perishable baked goods *exclusively* while all the others produce also bread, food products or confectionaries.

Over three hundred workers are employed in this industry which is concentrated largely in Halle and Magdeburg. The *Works* Friwi ~~Co.~~, Stilberg (Hars), Fleming GmbH, Dessau, and David's *Cookie (Honigkuchen) Factory,* ~~Honigkuchenwerk~~, Fl. Gross, Halle/Saale are the largest and best known manufacturers. Non-perishable baked goods are made out of flour, sugar, shortening, and other ingredients. Because of their low moisture content, such baked goods, if ~~not~~ properly packaged, can be ~~used~~ *kept* for a long time without losing their taste or wholesomeness. The principal non-perishable baked goods are hard and ~~soft~~ *soft* cookies (Hart- und Weichkeke), Zwieback, Lebkuchen, pretzels, biscuits, ~~ginger bread~~ *Honigkuchen and*, wafers. Special machines prepare, mix, and knead the dough, which ~~is~~ *is* then fed into molding machines and *rollers* (Schlichtwalzen). Stamping machines shape the dough which is then baked.

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Perfume Oils and Essential Oils

The manufacture of perfume<sup>oils</sup> and essential oils is merely an auxiliary branch of the food industry. There are 33 small or medium-sized plants engaged in such production, 30 of which receive production quotas. Ten enterprises produce perfume<sup>oils</sup> and essential oils exclusively and 20 have a mixed production, including pharmaceuticals, spirituous liquors, mineral water, fruit juices, preserves, and baking flavors. The majority of these plants are located in Halle and Magdeburg, 8 being located in the former<sup>city</sup> and 9 in the latter. The following are large and well-known firms whose annual turnover is near a million <sup>presumably</sup> Deutsche marks: VENAG Essential Oils Factory, Magdeburg; Para Works, Pohle & Erben, <sup>Hessler & Hermann, Ragnitz;</sup> C. Winkler & Co., Halle (S. aale); F. W. Richter, Magdeburg; <sup>and</sup> Gross & Co., Merseburg. Naturally pure essential oils from plant or animal materials <sup>as well as</sup> ~~and~~ synthetics are manufactured.

The following methods are used for the extraction of essential oils:

## a) Distillation

<sup>using</sup> Through heated 95-percent alcohol, the volatile constituents are distilled off into retorts and then condensed.

b) Extraction<sup>^</sup> The aromatic substances are extracted in special apparatus by means of heated alcohol; all ingredients which are soluble in ~~XXXXXX~~ alcohol, including the non-volatile material, are thus extracted.

c) Maceration: Steeping of raw material in an alcohol or water and alcoholic mixture at room temperature, over <sup>an extended</sup> ~~long~~ period of time. Special apparatus (percolators) are used.

## d) Digestion

The method is essentially the same as maceration but is carried out at a higher temperature ~~and~~ <sup>shorter and</sup> ~~at a higher temperature~~

## e) Solution

A dissolving process which is generally used only for volatile oils and ~~some~~

<sup>synthetic</sup> XX perfumes.

Combinations of these processes are also used. Although the distillation method is favoured in the manufacture of <sup>light</sup> ~~these~~ essential oils, the extraction method is used for heavier essential oils.

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Picture <sup>S</sup> ~~Caption~~:

1. Partial view of the People-Owned Dessau Sugar Refinery (p. 5)
2. Full view of the People-Owned <sup>/White/</sup> Sugar Factory in Zeitz. (aerial photo)
3. Partial view of the People-Owned Sugar Refinery in Dessau (p. 11)
4. Full view of the People-Owned White Sugar Factory in Zeitz.
5. ~~XXX~~ <sup>/Picture of a row/</sup> of white sugar centrifuges at the People-Owned White Sugar Factory in Zeitz.
6. View of the buildings of the Hoetensleben Sugar Factory (p. 17)
7. View of a sugar-beet silo at the ~~XX~~ Sugar Factory ~~XX~~ Gatersleben (p. 18)
8. Picture of the diffusion battery at the Hoetensleben Sugar Factory (p. 18)
9. Picture of the Saturator at the Hoetensleben Sugar Factory (p. 19)
10. View of the saturation and evaporation station at the Hoetensleben Sugar Factory (p. 20)
11. Picture of four cookers at the Hoetensleben Sugar Factory (p. 21)
12. Five views of employees' rooms and sanitary installations at the Dessau Sugar Refinery (p. 23)
13. View of operations in the bonbon division of the ~~XXI~~ Flemming GmbH in Dessau (p. 29)
14. Picture of workers operating 42 bonbon-wrapping machines at the Henze K.-G. in Ellenburg. (p. 29)
15. Picture of the dragee division (shows tilted kettles) at the VENAG Chocolate Works at Oschersleben (p. 30)
16. Picture of a candy-molding machine for fondants at the VENAG Chocolate Factory at Halle (p. 30)
17. Picture of several women working at a candy glazing machine at the VENAG Chocolate Factory in Halle (p. 30)
18. View of gate ~~XX~~ and approaches of the Boehme A.-G. in Delitzsch (p. 31)
19. View of machines for preparing dough at the Flemming GmbH in Dessau (p. 32)
20. Picture of a machine for rolling, stamping, cutting, and imprinting cookies at the Friwi Works in Stolberg (Harz). (p. 32)
21. Picture of distillation equipment at the VENAG Essential Oils Factory in Magdeburg (p. 33)
22. Picture of cooking vats at Winkler & Co. in Halle (Saale) (p. 35)
23. Picture of the laboratory at the VENAG Essential Oils Factory in Magdeburg. (p. 35)

**CONFIDENTIAL****ECONOMIC SITUATION: Milk, Fat, and Meat Products**

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Fourth Quarter 1948

	Milk Processing	Sour Milk Cheese	Oil Seed Processing	Margarine	Meat
Number of Plants					
People-Owned	--	--	2	1	2
Private	62	133	2	1	2742
Cooperatives	230	--	--	--	26

Number of Workers					
People-Owned <sup>plants</sup>	--	--	379	378	333
Private plants	360	724	72	274	5791
Cooperatives	2,080	--	--	--	101

Production (in tons) <sup>plants</sup>					
People-Owned	--	--	4,050	1,000	610
Private plants	16,861	676	290	5,200	5,162
Cooperatives	<del>221,000</del> 82,334	--	--	--	266

Capacity (in tons) <sup>plants</sup>					
People-Owned	--	--	4,050	2,700	1,575
Private plants	45,300	5,000	1,300	10,000	27,234
Cooperatives	221,000	--	--	-- m	777

Percentage Utilization of Capacity <sup>plants</sup>					
People-Owned	--	--	100	37	38.7
Private plants	37	13.3	22	52	19
Cooperatives	37	--	--	--	34.2

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Milk Products and Fats

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Two important aspects of the manufacture of milk products and fats are the processing of milk <sup>in</sup> ~~at~~ dairies and the processing of ~~cheese~~ oilseeds and oil <sup>in</sup> ~~at~~ oil mills and margarine factories.

Land Sachsen-Anhalt has 290 dairies, 133 cheese factories, 28 oil mills, and 3 margarine factories. The total turnover in the milk and fats industry amounted to 79,000,000 Deutsche marks in 1947 and 117,000,000 Deutsche marks in 1948.

The dairies include 231 Raiffeisen cooperatives (Gen. Betriebe), one state-owned enterprise, <sup>two (consumer cooperative)</sup> ~~one~~ Konsum enterprise, one VdgB (Peasants' Mutual Aid Association) enterprise, and 55 private enterprises. Although the majority of dairies are located in the northern part of Land Sachsen-Anhalt, dairies in the south actually have a higher capacity. If the dairies were to utilize their full capacity they could process 1,000 tons of milk for drinking, and make 2,100 tons of butter and 945 tons of cheese and quark <sup>(daily)</sup> (whey cheese). Sixty-one dairies have a daily capacity of up to 5 tons; 139 a daily capacity of ~~XXXX~~ 5-10 tons; 73 a daily capacity of 10-20 tons; and 17 ~~dairies~~ a daily capacity of over 20 tons.

The Raiffeisen dairies in Magdeburg and Zeitz are two of the most important enterprises in Land Sachsen-Anhalt. The table below indicates the change in the organizational structure of the dairy system which has taken place ~~XX~~ in recent years.

Year	Cooperatives		Private Plants		Other types of Business Organizations		VENAG, Konsum, and VdgB	
	No.	in %	No.	in %	No.	in %	No.	in %
1938	242	70.8	96	28.1	4	1.1	-	-
1947	230	78.5	59	20.4	-	-	4	1.1
Milk Deliveries Received:					1938	1947		
Cooperatives:								
in percent					78.1	83.3		
in tons					640,400	376,200		
Private Plants:								
in percent					19.1	15.6		
in tons					156,300	70,300		

25X1

1938

1947

Other types of  
business organizations:  
in percent  
in tons

22,700

VENAG, Konsum, and VdgB  
in percent  
in tons

1.1  
4,900

### Cheese Factories:

In the last few years a number of dairies have begun producing rennet cheese (Lankaese) in order to make better use of the milk and also thereby to provide a better price for the milk producer. Up to now rennet cheese has been made in only a few of the southern dairies, while all the others ~~have been~~ engaged exclusively in the processing of skim milk into sour or curdled milk and into white (whey) cheese. The following are the ~~principal~~ principal types of rennet cheese manufactured: Camembert, Limburger, Tilsiter, Hollaender.

The making of sour milk cheese in Land Sachsen-Anhalt dates back to 1866. At present, 133 plants, concentrated principally in the Harz region, have a quarterly capacity of 5,000 tons. The majority of the plants manufacturing sour milk cheese are small enterprises.

Number of Plants	Quarterly Capacity	Percentage of Total Capacity	Cheese Production (in tons)	
			1938	1947
99	74.4 % up to 50 tons	2,585 t -- 51.7 %	13,900	7,500
27	20.3 % up to 100 t	930 t -- 18.6 %		
6	4.5 % up to 300 t	985 t -- 19.7 %		
1	0.8 % up to 500 t	500 t -- 10.0 %		

Formerly, these factories obtained the basic substance "Quark" from all sections of Germany and from foreign countries, but since 1945 they have been dependent exclusively upon the quark obtained in Land Sachsen-Anhalt. However, the full capacity of the plants has not yet been reached. Process cheese is not manufactured in Sachsen-Anhalt, although this is projected under the Two-Year Plan. An increase in use of whey is also planned.

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PRODUCTION TREND -- Milk and Fats

	1946				1947				1948				1949
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I
Capacity in 1,000 DM	129,000	129,000	129,000	129,000	133,000	133,000	133,000	133,000	143,000	143,000	143,000	143,000	143,000
Percentage Utilization of Capacity	13.8	16.7	14	12.7	13.2	12.5	17.8	15.8	16.9	16	17.6	30.9	28.2
Production Quota <sup>a</sup> in 1,000 DM	18,100	23,604	14,246	15,821	15,819	22,045	15,179	12,369	13,177	13,712	22,214	31,840	32,593
Production in 1,000 DM	17,771	21,542	18,177	16,490	17,664	16,750	23,750	21,064	24,249	22,962	25,291	44,218	40,271
a.) VEMAG <sup>*</sup>	-	-	-	-	-	-	-	-	4,934	1,638	4,247	13,770	7,842
b.) Cooperatives	12,306	16,764	13,789	12,438	14,676	13,839	14,298	11,570	13,145	12,747	16,771	16,595	28,080

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PRODUCTION TREND — Butter

	1946				1947				1948				1949
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I
Capacity in tons	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Production Quota in tons	4,061	5,374	3,481	3,323	3,134	5,260	3,817	1,627	2,492	3,022	3,715	2,180	2,940
Production in tons	3,171	5,171	3,575	3,337	3,654	3,823	3,254	2,123	2,520	2,847	2,813	2,320	3,669
a.) VEWAG*	-	-	-	-	-	-	-	-	4	-	-	-	-
b.) Cooperatives	2,547	3,130	2,870	2,661	2,929	3,048	2,643	1,677	1,975	2,298	2,262	1,835	3,119
Percentage Utili- zation of Capacity	31.71	51.71	35.70	33.36	36.54	38.23	32.54	21.23	25.20	28.47	28.13	23.20	36.69

\* Federation of People-Owned Enterprises of the Food, Beverage, and Tobacco Industries in Land Sachsen-Anhalt

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**CONFIDENTIAL****Oil Mills<sup>1</sup>**

There are three oil mills operating in Sachsen-Anhalt -- the people-owned Magdeburg Oil and Fat Works and ~~two~~ two smaller private plants. The capacity of the Magdeburg works was increased last year by the installation of an extraction plant.

From the processing of 66 tons of <sup>oil seeds</sup> ~~seed oil~~ daily, 2,563 tons of oil were produced in 1947 and 3,107 tons in 1948.

In addition to the oil mills which operate exclusively <sup>for the supply</sup> ~~under the procurement~~ plan, 25 small mills process oil seed <sup>for small farmers</sup> ~~for small~~ on ~~contract~~ <sup>a commission basis</sup>.

Margarine Factories:

The people-owned Magdeburg Oil and Fat Works, the Dommitzsch Konsum Margarine Factory and the Milka Margarine Factory in Pratau (Elbe) process vegetable oils into margarine.

The total capacity per working day is 115 tons of margarine, of which the Milka Margarine Factory produces 80 tons, ~~and~~.

Margarine production was 3,225 tons in 1947 and 10,155 tons in 1948. Production was increased 21.5 percent [sic] in 1948 by importing sunflower oil from the USSR.

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Milk Processing:

Very little milk is processed for drinking purposes, since most of it is made into butter. The milk is first skimmed, the cream heated and then cooled. Only pure cultures containing special bacteria are used to sour the cream. The butter produced is composed of 79 percent fat, 1 percent non-fat <sup>solids</sup> ~~dry matter~~ (lactose), and 20 percent water. The standard yield for one kilogram of butter is set at 80.66 fat units, a maximum of 23.05 kilograms of milk with 3.5 percent fat content may be used. The skim milk produced is a valuable food item from which rennet cheese, quark, and sour-milk cheese are made.

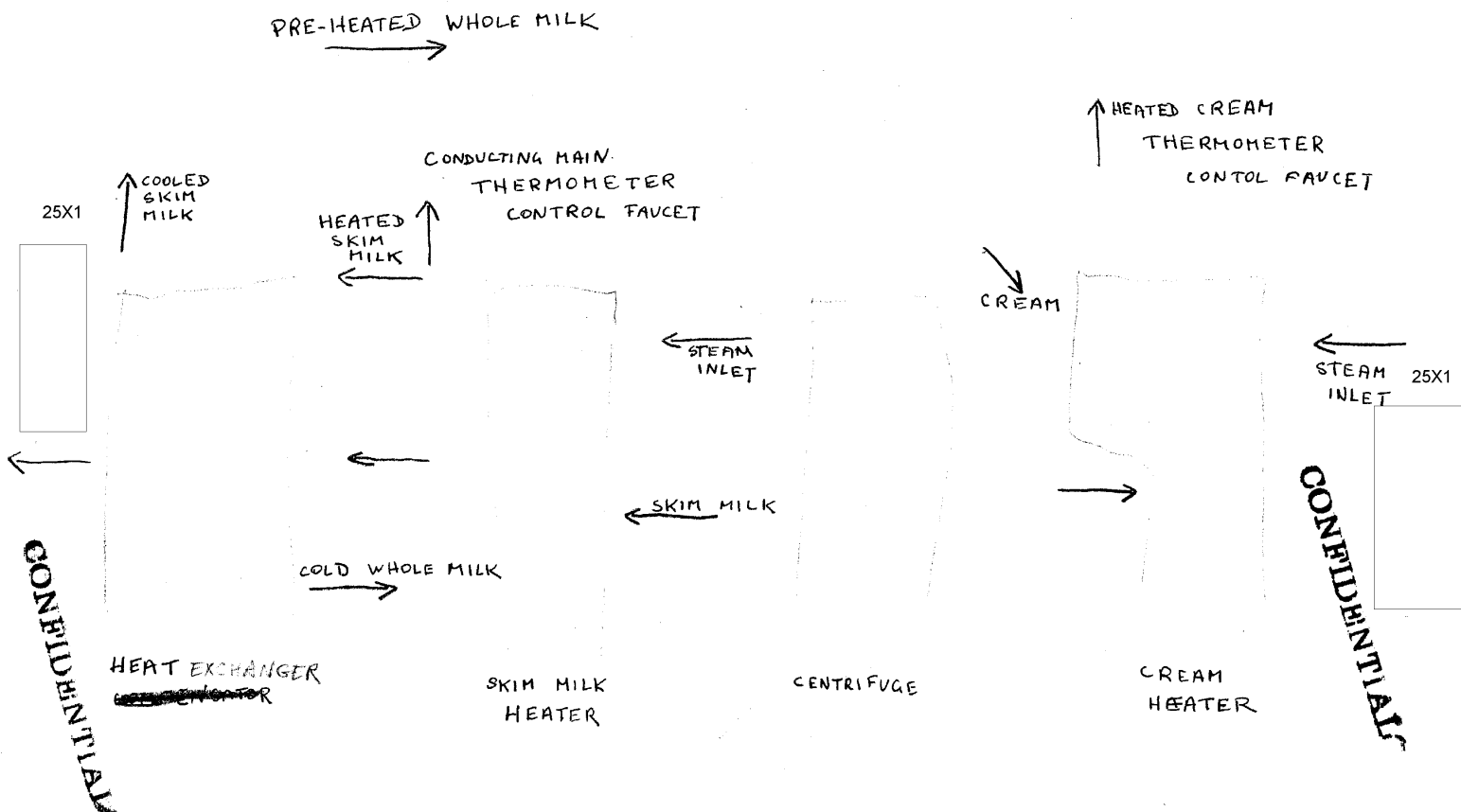
Processing of Oil Seeds

After the oil seeds, which <sup>may</sup> ~~must~~ have <sup>only</sup> a certain <sup>maximum</sup> ~~moisture~~ content, <sup>have</sup> ~~been~~ cleaned and dried, <sup>they are</sup> ~~then~~ crushed and then pressed out by means of a hydraulic or screw press. After pressing, the oil cake still has a 7-10 percent oil content. It was formerly used as forage. Today, by extracting more from the ~~XX~~ residue, the oil content is reduced to one percent. The protein content of the oil cake is 33 percent. The extraction method of obtaining the oil employs benzine in a chemical process. The ~~EX~~ crude oil obtained through either method, pressing or extraction, is not fit for human consumption because of the bitter principle it contains, and must therefore be refined. The crude oil is <sup>neutralized</sup> ~~deacidified~~ in refining kettles by being treated with a solution of caustic soda.

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# SKIMMING AND HEATING OF MILK



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**CONFIDENTIAL**The Two-Year Plan

## Plan for 1949:

Item	Amount in tons <sup>1000</sup>	Value in 1,000 DM
Vegetable Oilx, crude	4	5,600
" " refined	5.68	8,179
" " hardened	9	13,500
Margarine	11.9	19,635
Butter	12.6	40,320
Whey cheese(Speisequark)	4.8	1,920
Curd for processing into cheese		
<del>Speisequark</del>	1.9	883
Skim-milk cheese		
<del>Whey cheese (lean cheese)</del>	7.6	6,536
Cheese with high fat content		
<del>Butter cheese (rich cheese)</del>	--	--

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## The Manufacture of Margarine

Margarine is manufactured from vegetable fats (some with supplementary animal fat), <sup>and</sup> water, ~~as well as~~ by an admixture of ~~XXXXXX~~ glucose, potato starch, common salt, and other substances.

Most of the vegetable oil extracted in the oil mills is used as raw material for the manufacture of margarine. Sixty percent of the oil used for the production of margarine is hardened <sup>(hydrogenated ?)</sup> at Rodleben, the largest hardening plant in Land Sachsen-Anhalt. Margarine consists of 55-60 percent hardened fats and 45-40 percent liquid oils.

In manufacturing margarine the hardened fats are first melted in special melting vessels. The melted fat passes ~~XXXXXXXXXX~~ through a weighing device to the tempering or mixing vessels, where it is mixed with the liquid oil and other necessary ingredients. The resulting emulsion is cooled in special cooling drums, <sup>and then</sup> kneaded, shaped, and packed. The margarine must contain 78 percent fat, 2 percent non-fat <sup>solids,</sup> ~~ingredients~~ <sup>(XXXXXXXXXX)</sup>, and 20 percent water.

## Meat Products

The meat products industry in Land Sachsen-Anhalt is not operating at full capacity. Approximately 3,000 small plants supply the public with meat and sausage products. Up to 1945 the business of the <sup>eight</sup> meat products factories was conducted exclusively on a mail order basis with all sections of Germany.

The meat products factories suffered greatly <sup>from</sup> ~~since~~ the changed conditions. Some of them took up the processing of slaughtered animals on a commission basis.

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[REDACTED]  
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**The Two-Year Plan**

**Plan for 1949**

Item	Amount in 1,000 tons	Value in 1,000 DM
Meat	20.5	28,420
Slaughtering <sup>house</sup> fat, raw	3.2	4,641
<sup>^</sup> Canned meat	1.0	1,900

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[REDACTED]

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## PRODUCTION TREND -- Fresh Meat

	1946				1947				1948				1949
	I	III	II	IV	I	II	III	IV	I	II	III	IV	I
Capacity in tons	29,600	29,600	29,600	29,600	29,600	29,600	29,600	29,600	29,600	29,600	29,600	29,600	29,600
Percentage Utilization of Capacity	19.2	20.1	16.3	19.4	16.4	17.0	18.2	31.3	20.3	11.8	14.4	20.4	13.2
Production Quotas in tons	14,000	6,650	5,200	4,700	4,255	5,260	4,126	7,328	5,116	2,917	4,503	5,793	3,600
Production in tons	5,678	5,961	4,541	5,740	4,853	5,036	5,381	9,417	6,013	3,481	4,272	6,038	3,906
a.) VERAG*	-	-	-	-	-	-	-	-	-	-	-	-	236
b.) Konsum**	-	-	-	-	-	-	-	-	-	-	-	-	-

\* Federation of People-Owned Enterprises of the Food, Beverage, and Tobacco Industries in Land Sachsen-Anhalt

\*\* Consumer cooperation

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Milk, Fat, and Meat Products

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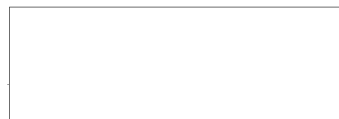


Pictures:

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1. Full view of the Zeitz dairy.
2. Full view of the Pratau (Elbe) Margarine Factory.
3. Full view of the VENAG Magdeburg Oil and Fat Works.
4. Milk receiving department at the Zeitz dairy.
5. Heating and (cream) separation stations at the Zeitz dairy.
6. Butter manufacturing section at the Zeitz dairy.
7. Camembert cheese department at the Zeitz dairy.
8. "Fritz" butter-making equipment at the Zeitz dairy.
9. "Fritz" butter-making equipment at the Burg dairy.
10. Screw press at the Magdeburg Oil and Fat Works.
11. Extraction plant at the Magdeburg Oil and Fat Works. (center)
12. Extraction plant at the Magdeburg Oil and Fat Works. (right)
13. Refining process -- sebacic acid section of the Pratau (Elbe) Margarine Factory.
14. Refining process - <sup>neutralizing</sup> ~~acidulating~~, Pratau (Elbe) Margarine Factory.
15. Churning process, Pratau (Elbe) Margarine Factory.
16. Cooling drums at the Pratau (Elbe) Margarine Factory.
17. Packing room at the Pratau (Elbe) Margarine Factory.
18. Preparation of meat at the Halberstadt Meat Products Factory.

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## Economic Situation: Grain-Processing Industry

Fourth Quarter 1948

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	Flour	Cereal Products <del>Foodstuffs</del>	Edible Paste	Coffee Substitute	Malt
<u>Industrial Plants</u>					
a.) People-owned	14	6	2	3	7
b.) Private	1569	16	18	6	8
c.) Cooperatives	1	2	-	-	-
<u>Employees</u>					
a.) People-owned plants	581	125	98	377	244
b.) Private plants	3622	186	238	123	290
c.) Cooperatives	350	38	-	-	-
<u>Production</u>					
a.) People-owned plants	19,405	750	570	2,600	8,100
b.) Private plants	68,958	1,278	1,430	900	5,400
c.) Cooperatives	5,383	600	-	-	-
<u>Capacity</u>					
a.) People-owned plants	44,180	2,400	700	4,490	16,800
b.) Private plants	164,820	8,410	2,100	1,900	11,200
c.) Cooperatives	15,000	4,950	-	-	-
<u>Percentage Utili- zation of Capacity</u>					
a.) People-owned plants	43.92	31.25	81.42	57.90	48.20
b.) Private plants	41.83	15.20	68.10	47.36	48.20
c.) Cooperatives	35.88	12.12	-	-	-

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PRODUCTION TREND: Grain-Processing Industry

Milled Products, Cereal Products,  
Milling-Residues and Edible Paste;  
Malt, Coffee Substitute

	1946				1947				1948				1949
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I
Capacity in 1,000 DM	77,134	77,434	78,434	81,434	77,510	77,600	78,645	81,645	81,510	81,690	82,690	85,757	85,757
Percentage Utilization of Capacity	27%	30%	29%	38%	34%	33%	34%	43%	40%	35%	39%	41%	37%
Production Quotas in 1,000 DM	20,410	23,331	20,222	32,769	27,100	27,490	28,956	37,658	31,146	28,461	30,963	37,077	33,371
Production in 1,000 DM	20,849	23,330	23,145	31,187	26,710	26,003	27,022	35,494	33,094	28,824	32,251	35,477	31,797
a.) VEBAG*	-	-	-	-	3,699	6,151	6,894	7,403	6,780	6,411	7,514	10,237	10,099
b.) Konsum**	2,043	2,030	2,793	3,648	4,025	2,709	3,280	2,846	3,331	2,421	3,612	2,515	3,855

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\* Federation of People-Owned Enterprises of the Food, Beverage, and Tobacco Industries in Land Sachsen-Anhalt

\*\* Consumer cooperatives

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## PRODUCTION TREND: Flour Manufacture

	1946				1947				1948				1949
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I
Capacity in tons	224,000	224,000	224,000	224,000	224,000	224,000	224,000	224,000	224,000	224,000	224,000	224,000	224,000
Percentage Utilization of Capacity	27%	30%	27%	45%	34%	36%	34%	39%	34%	36%	42%	42%	39%
Production Quota <sup>a</sup> in tons	61,000	67,900	60,000	100,000	70,000	80,000	72,000	90,000	75,000	80,000	85,000	95,000	92,000
Production in tons	61,417	67,900	68,200	95,786	76,524	80,253	76,971	87,570	77,314	81,920	94,822	93,746	87,210
a.) VEBAG <sup>b</sup>	--	--	--	--	16,379	16,716	14,260	15,333	11,157	13,785	20,848	19,405	21,308
b.) Konsum <sup>c</sup>	4,830	5,426	6,598	9,488	11,218	6,182	6,396	6,943	7,022	5,906	8,239	5,383	11,509

\* Federation of People-Owned Enterprises of the Food, Beverage, and Tobacco Industries in Land Sachsen-Anhalt

\*\* Consumer cooperatives

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## Flour-Milling Industry

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There are about 1,700 flour mills of various sizes in Land Sachsen-Anhalt. The fertility of the soil coupled with an intensive agriculture gave rise to a flour-milling industry which, because of its capacity and the raw material situation, <sup>acquired</sup> ~~the~~ the task of milling grain for the neighboring regions, Brandenburg, Westfalen, Sachsen, and Thuringen.

Furthermore, large quantities of grain were imported for processing from foreign countries by way of the Elbe waterway.

The mills in Land Sachsen-Anhalt are divided as follows:

79 mills with a daily capacity ~~XX~~ over 10 tons

95 mills with a daily capacity ~~XX~~ over 5 tons

1,500 mills with a daily capacity under 5 tons

The 79 large mills with a daily capacity over 10 tons are located geographically as follows: 33 in the Halle district; 38 in the Magdeburg district; 8 in the Dessau district.

These mills are located at transportation centers such as railroad junctions and water <sup>transshipping</sup> ~~many~~ points. The following are the most important large mills in Land Sachsen-Anhalt:

Name	Location	Daily Capacity in tons
Konsum Cooperative Union/ GmbH Magdeburg Mill	Magdeburg	200
(VENAG) Magdeburg Milling Works	Magdeburg	200
(VENAG) Alsleben Milling Works	Alsleben (Saale)	130
Hildebrand Milling Works A.G.	Boellberg-Halle	110
(VENAG) Bernburger Saalmuehlen	Bernburg	100
(VENAG) Milling Works	Stendal	60
W. A. Drenckmann, Steam Mill	Magdeburg-Sudenburg	60
A. F. Deissner, Mill	Schoenebeck (Elbe)	55

The milling industry ~~concerning daily processing capacity, can be~~ <sup>includes</sup> about 700 commercial mills and 1,000 mills which work for farmers on a commission or barter basis.

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The commercial mills concentrate principally upon the manufacture of high-grade flour at competitive prices. The efficiency of the equipment is the determining factor in this matter.

After 1945 the required 99-percent <sup>extraction</sup> ~~yield~~ for rye and wheat confronted the commercial mills with new tasks. Similarly, a barley <sup>extraction</sup> ~~yield~~ of 87 percent and <sup>an</sup> ~~oats~~ <sup>extraction</sup> ~~yield~~ of 62 percent ~~XXXX~~ were difficult to attain, since the equipment was not adapted to such performance. The necessary machines for the required processing of oats -- which had not been prevalent up to then, were not available.

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## Flour Manufacture

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Upon receiving grain, ~~the~~ mills take measures to <sup>prevent</sup> ~~protect~~ the grain  
 from spoiling and to <sup>establish extraction data,</sup> ~~determine yield standards (Ausbeutegrundlagen)~~. The  
 percentage of dirt and the moisture content are determined. All efforts  
 are made to minimize losses in the unloading process. The larger mills  
 use pneumatic unloading equipment, particularly when unloading ships. By  
 means of suction ~~air~~ this equipment fills the individual bins of the silo  
 granary. Automatic scales weigh the grain, which usually goes through a  
 cleaning process as well. In order to prevent <sup>o</sup>spillage, the grain <sup>is</sup> turned  
 over several times, according to the length of time it has been stored.  
 The grain is cleaned again before being ground.

The milling process consists of crushing the kernels of grain by means  
 of millstones ~~or~~ -- in modern mills -- by crushing between steel or porce-  
 lain rollers. The thin-walled cells of the grain kernels burst during the  
 milling process and free the starch granules. The coarser flour particles  
 go back through the roller frames again. This process is repeated until the  
 product conforms to standard flour types. The flour produced goes to auto-  
 matic scales and then to the packing or storage room. The bran residue  
 (Kleie) must be specially stored. Grits ~~are~~ are a product of the inner wheat kernel.  
~~Starch particles.~~

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## The Two-Year Plan:

Plan for 1949:

Item	Amount in <sup>( 500 m )</sup> tons D.D.T.	Value in 1,000 DM
Flour of all types	400	105,200
Cereal products <del>Starch</del> of all types	35.5	21,655
Edible pastes	10	6,000
Coffee substitute	12.2	4,880
Malt	20	10,000

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*Cereal Products*  
~~Foodstuffs~~ and Edible Pastes

The processing of grains for ~~foodstuffs~~ *cereal products* in Land Sachsen-Anhalt is a relatively recent development which will be gradually expanded.

Before 1945 Sachsen-Anhalt had:

- 1 plant manufacturing rolled oats (oatmeal) -- 3,000 tons annual capacity
- 3 ~~1~~ plants manufacturing pearl barley -- 12,900 tons annual capacity
- 7 plants manufacturing edible pastes -- 3,400 tons annual capacity

In order to guarantee the food supply for the population the food industry had to be considerably expanded after 1945. This expansion has been essentially completed so that Land Sachsen-Anhalt had, as of 1 July 1949,

- 6 plants manufacturing rolled oats (oatmeal) -- 13,000 tons annual capacity
- 11 plants manufacturing pearl barley -- 37,400 tons annual capacity
- 7 plants manufacturing baby foods -- 9,016 tons annual capacity
- 20 plants manufacturing edible pastes -- 12,665 tons annual capacity

These plants employ a total of 720 workers and employees.

Before the war, food requirements were met principally by purchases from other Laender. Rolled oats and pearl barley were obtained from Land Mecklenburg and the Free City of Luebeck, and edible pastes from southern Germany (Wuerttemberg and Baden). These Laender had developed considerable food industries corresponding to the needs of their respective populations.

~~These Laender~~ specialize in moderately-priced quality products,

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### The Manufacture of Rolled Oats (Oatmeal)

In manufacturing rolled oats (oatmeal) the <sup>extraction</sup> ~~yield~~ norm of 57 percent must be strictly observed. This norm can be reached if the oats used have a minimum hectoliter weight of 50 kilograms.

The oats are freed <sup>of empty hulls</sup> ~~from oat husks~~ and other impurities by a cleaning process. Then they ~~oats~~ are hulled. To do this, the oats are ~~and~~ <sup>and</sup> steamed/ dried, and the bitter substances are removed. At the same time the hull becomes friable. After the dried oats are cooled the hulling process begins. The hulls are separated from the kernels by a table sorter. Crushing is the last step in manufacturing <sup>the</sup> rolled oats, which are <sup>then</sup> packed, after cooling.

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### The Manufacture of Pearl Barley (Groats)

Hulling mills make pearl barley (groats) out of barley. The manufacturing process is similar to that used in grain mills, with the difference that the barley granules are not ground but only separated from the hulls. The quality and fineness of the groats depends upon the number of hulling processes used.

The <sup>extraction</sup> ~~yield~~ norm is now set at 80 percent. To obtain this yield norm the barley <sup>grains</sup> ~~granules~~ can <sup>undergo</sup> ~~undergo~~ a maximum of two hulling processes. The resulting product is called coarse barley (groats). In manufacturing barley-groats the barley is put through a grits cutter. The waste amounts to an additional 2-3 percent.

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## The Manufacture of Edible Pastes

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The manufacture of edible pastes requires a faultless flour-mixing installation, noodle cutting machines, or presses, and good drying equipment. The maintenance of <sup>production</sup> ~~field~~ norms is dependent principally upon the drying equipment. Before 1945 the percentage of shrinkage was 6 percent in manufacturing edible pastes having a 10-11 percent moisture content. This moisture content ensures the edible pastes <sup>5</sup> virtually complete stability in storage. The percentage of shrinkage <sup>29e</sup> allowed at present is only 3 percent, which means that the edible paste must have a moisture content of 13 percent. After the paste has been prepared it goes through rollers or presses into cutting machines. Plants with modern equipment have automatic presses which combine these operations. It takes about 6-24 hours to dry the ~~edible~~ paste.

DIAGRAM

- |   |                   |
|---|-------------------|
| 1.- RAW MATERIAL                        | 1a.- Flour FEEDER |
| 2.- ELEVATOR                            |                   |
| 3.- FLOUR SIEVE INSTALLATION            |                   |
| 4.- SPECIAL FLOUR SILO                  |                   |
| 5.- FULLY AUTOMATIC PRESS               |                   |
| 6.- VENTILATOR - CONVEYER MACHINERY     |                   |
| 7.- AUTOMATIC HURDLE TABLE [Hordenfick] |                   |
| 8.- DRYING SPACE                        |                   |
| 9.- POURING DOWN                        |                   |
| 10.- FINISHED PRODUCT                   |                   |

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**CONFIDENTIAL****Coffee Substitutes**

Land Sachsen-Anhalt has two large plants and seven medium-sized plants which manufacture coffee substitutes. The two largest plants are the VENAG Coffee Substitute and ~~Foodstuffs Plant~~ <sup>Cereal Products Plant</sup> in Halle/Saale (monthly capacity of 1,000 tons) and the Sachsen-Anhalt Konsum Cooperative Union GmbH, Magdeburg Coffee Products Plant (monthly capacity of 300 tons). Favorably situated for both rail and water transport, they are the largest plants of their kind in Germany, and can meet the coffee substitute requirements of central, north, and east Germany.

All plants working at full capacity could produce approximately 2,100 tons of coffee substitutes monthly. Barley, rye, and oats are the raw materials used for manufacturing these coffee substitutes. A small percentage of sugar-beet cossettes and chicory provides the flavor. A sifter frees the grain from impurities, after which it is roasted. The roasting period lasts several hours, depending upon the degree of roasting. ~~The~~ <sup>are roasted</sup> the substitute materials, such as sugar-beet cossettes and chicory, ~~are roasted~~ in the chicory roaster. The raw materials are ground separately in ~~Wahlmaschinen~~ roller mills. They are mixed according to a prescribed formula in a mixing machine. The finished coffee substitute ~~substitute~~ is conveyed in tubes to the packing rooms. Coffee substitutes require ~~extensive~~ dry storage rooms.

**GRAIN COFFEE FACTORY**

- 1.- RECEPTION ELEVATOR
- 2.- ~~DOWN~~ TUBE AFTER FABRICATION
- 3.- ELEVATOR TO CLEANING PROCESS
- 4.- ASPIRATOR
- 5.- LIFT-OVER ELEVATOR
- 6.- SORTING CYLINDER & SEPARATOR
- 7.- CYCLONE (CLEANER)
- 8.- SOFTENING CONTAINER
- 9.- MALTING INSTALLATION
  - A. SEED DRUM
  - B. SEED BOX
  - C. THRASHING FLOOR
- 10.- ELEVATOR TO THE ROASTER
- 11.- FEED PIPE
- 12.- ROASTING APPARATUS

- 13.- COOLING SIEVES
- 14.- CONVEYER BELT
- 15.- ASPIRATOR FOR ROASTED GOODS
- 16.- RACKING CONTAINER
- 17.- PACKING TABLE & RACKING SCALE
- 18.- BAG RACKING
- 19.- SLIDE

Getreidelager = <sup>Grain</sup> Storage  
 Keller = Cellar  
 Putzerei = Cleaner  
 Weicherei = Soaker  
 Tenne = Thrashing floor  
 Aufschüttboden = ~~Storage, Attic~~  
 Rösterei = Roaster  
 gepackte goods

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**Malthouses**

Because "Saale barley" is used extensively as brewery barley, the malt industry of Land Sachsen-Anhalt enjoys a favorable raw material position. A distinction is made between brewery-malthouses and commercial malthouses (Handelsmaelzereien). Brewery-malthouses are a part of the actual breweries themselves, whereas commercial malthouses are not located on brewery grounds. Brewery-malthouses, which originally constituted the malthouse industry, are not now included in <sup>[calculating?]</sup> production.

Land Sachsen-Anhalt has 15 commercial malthouses of which seven belong to the VENAG (Federation of People-Owned Enterprises of the Food, Beverage, and Tobacco Industry in Land Sachsen-Anhalt). The most important commercial malthouses in Land Sachsen-Anhalt are:

	monthly capacity in tons
1.) (VENAG) Konnern (Saale) Malt Factory	700
2.) (VENAG) Wrede Malt Factory, Mothen (Anhalt)	625
3.) Aktien Landsberg Malt Factory, Landsberg	500
4.) (VENAG) Schkeuditz Malt Factory, Schkeuditz	500
5.) (VENAG) Sangerhausen Malt Factory, Sangerhausen	(400) 400
6.) Eisleben Malt Factory A.G., Eisleben	225

The malthouses, in addition to meeting Sachsen-Anhalt requirements, ship to all GDR Laender except Thuringen. Still the malthouses are not producing at full capacity. Before 1945 Rheinland-Westfalen and northern Germany were also purchasers of this quality product. Sachsen-Anhalt malt was even shipped overseas. Therefore, the malthouses are at present forced to use their plant installations for the <sup>/dehydration/</sup> ~~dehydration~~ of vegetables, potatoes, herbs, and tobacco.

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**The Manufacture of Malt**~~CONFIDENTIAL~~

Barley cannot be used in its original form for brewing purposes. The starch in the barley, which is important in the brewing process, must be freed by malting. Artificial germination of the barley is induced in the "Weiche" (steeping tubs) by means of water, heat, and air. After the barley has been sufficiently <sup>steeped</sup>, the material is taken to the thrashing floor where it is constantly turned, spread, and piled up. After about eight days the germination is interrupted.

The "green malt" is ~~XXXXXX~~ transferred to the drying room, where the radicle quickly dies. The germs are removed by cleaning machines. The malt is then ready and after several weeks of aging can be brewed.

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Production and Working Processes in Maltheuses

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- 3) Receiving station for the barley
- 4) Weighing and testing of barley
- 5) Storage receptacle
- 6) Transportation to barley cleaning by a) bucket conveyer, b) pneumatic <sup>conveyer</sup> elevator
- 7) Cleaning and sorting of barley and weighing out of cleaned parts
- 8) ~~Storage~~ <sup>storing</sup> of cleaned barley on a) floors b) silos
- 9) Working on <sup>stored</sup> barley ~~with shovels~~ by a) turning with shovel b) trickling c) airing
- 10) Weighing and soaking of barley ( treated by watering, repumping, airing) operation lasts four days.
- 11) By-product- float barley (weighing, drying, <sup>ring</sup> ~~storing~~)
- 12) Softening of barley a) on thrashing floors b) in boxes or a) and b) combined c) in drums
- 13) Treating of green malt during period of germination (7-9 days) a) by hand b) <sup>mechanical</sup>
- 14) Transportation of green malt to ~~air-drying~~ <sup>air-drying</sup> room by a) bucket conveyer <sup>conveyer</sup> b) pneumatic, ~~car and elevator~~ c) car and elevator
- 15) Transport of green malt to drying room, as indicated in 14) <sup>kiln</sup>
- 16) Loading in drying ~~room~~ (spreading on the upper hurdle) a) by hand b) with cars c) through pipes
- 17) Drying of malt a) heating of kiln, b) turning of malt 1. by hand 2. by mechanical turner c) carrying-away and weighing of malted dust (waste material) d) carrying away of ~~at~~ ashes.
- 18) Malt is pushed down from kiln and stored in boxes a) ~~by~~ hand b) semi-mechanically c) mechanically.
- 19) Transporting of malt for cleaning a) ~~by~~ bucket conveyers b) pneumatic conveyers
- 20) Germinating and cleaning of malt
- 21) Weighing and carrying-away of malt to storage place (floors, silos) a) by manpower b) by mechanical means 1. pneumatic 2. bucket conveyers
- 21a. Storing of finished malt
22. Putting malt in sacks and getting it ready to transport to crushing room
23. Loading of malt a) by hand b) through slides c) by conveyer

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1. Full view of the VENAG Halle Coffee Substitute and ~~Foodstuff~~ Plant.

2. Drying installation at the Max Emmerling plant in Zeitz.

3. Full view of the VENAG Halle Coffee Substitute and ~~Foodstuff~~ Plant.

# Pictures

4. Grain roasters at the VENAG Halle Coffee Substitute and ~~Foodstuff~~ Plant.

5. Packing machines at the Konsum Cooperative Union GmbH, Magdeburg Coffee

1. (German) windmill on trestles.

2. VENAG Alsleben Milling Works.

3. Full view of grain elevator installations at Halle.

4. Grain receiving station, Konsum Cooperative Union GmbH, Magdeburg Mill.

5. Roller frame hall at the W. A. Drenckmann plant in Magdeburg.

6. Plan sifting machines at the W. A. Drenckmann plant in Magdeburg.

7. [Caption illegible.]

8. Drying kiln and table sifter at the Konsum Cooperative Union GmbH, Magdeburg Mill.

9. Steam installation at the Konsum Cooperative Union GmbH, Magdeburg Mill.

10. Cooling installation at the VENAG Halle Coffee Substitute and ~~Foodstuff~~ Plant. *Cereal Products*

11. Vertical shellers at the W. Lautenschlaeger plant in Weissenfels.

12. Noodle-cutting machine at the VENAG Oschersleben Chocolate Factory.

13. Edible paste presses at the Max Emmerling plant in Zeitz.

14. Drying installation at the Max Emmerling plant in Zeitz.

15. Full view of the VENAG Halle Coffee Substitute and ~~Foodstuff~~ Plant. *Cereal Products*

16. Grain roasters at the VENAG Halle Coffee Substitute and ~~Foodstuff~~ Plant. *Cereal Products*

17. Packing machines at the Konsum Cooperative Union GmbH, Magdeburg Coffee Products Plant.

18. Chicory roasters at the VENAG Halle Coffee Substitute and ~~Foodstuff~~ Plant. *Cereal Products*

19. Plant kitchen at the VENAG Halle Coffee Substitute and ~~Foodstuff~~ Plant. *Cereal Products*

20. Three buildings (aerial sketch) of the VENAG Malt Factory in Koennern/ Saale, (Koennern, Nienberg, Nienburg).

21. Steeping tubs at the Aktien-Malt Factory in Landsberg.

22. Thrashing floor at the Aktien-Malt Factory in Landsberg.

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## POTATOES AND THEIR USE

In 1900 the number of hectares of potatoes planted per 10,000 people in various countries was as follows:

England	12.4
USA	13.8
Hungary	30.0
USSR	33.0
France	40.0
Austria	40.0
Germany	44.0

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Despite the growth in population after the turn of the century, there was no appreciable increase in Germany in the cultivated area. A systematic improvement of seed, planned cultivation of productive potato varieties, effective control of potato diseases, and addition of plenty of artificial fertilizer are responsible for the astounding increase in the yield. The potato is now the cheapest staple food item.

The following table compares cultivated area and crop yields since 1946:

Year	Potatoes in Tons	Cultivated Area in Hectares
1946	2,460,491	196,302
1947	1,858,597	183,093
1948	3,128,379	199,212

In 1948, 139,000 tons of potatoes, i.e., 4.4 percent of the potato harvest, went to the potato processing industry. For expanding this industrial branch Land Sachsen-Anhalt has 160 potato distilleries ready for operation, 18 potato flake factories, and 15 potato starch factories. <sup>If necessary,</sup> ~~In case of need,~~ the Land Sachsen-Anhalt fruit and vegetable processing industry could dehydrate eating potatoes on a large scale.

The <sup>se</sup> ~~following~~ potato processing plants supply essential raw materials for the following industries: paper processing; chemicals; food<sup>s</sup>; beverage<sup>s</sup>; and tobacco; textiles; pharmaceuticals; and forage.

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## ECONOMIC SITUATION: Potato Starch and Potato Flake Industry

Fourth Quarter 1948

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## Starch Industry

## Flake Industry

## Number of Plants

People-owned:	3	(x) 5
Private:	6	5
Cooperative:	8	9

## Number of Employees

People-owned:	144	36
Private:	x) 573	92
Cooperative:	234	126

## Production in Tons

People-owned:	1,859	208
Private:	2,176	852
Cooperative:	4,052	684

## Capacity in Tons

People-owned:	2,400	1,900
Private:	3,450	2,450
Cooperative:	4,800	3,600

Percentage Utilization  
of Capacity

People-owned:	77.45	11.55
Private:	63.07	34.70
Cooperative:	84.60	20.27

(x) four of which are branches of sugar factories

x) ~~XXXXXXXXXX~~ majority of whom are employed by the Deutsche/  
Maizena Works A.G./Barby

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## POTATO PROCESSING BY THE STARCH INDUSTRY

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1946/47 Working Season 1947/48 Working Season 1948/49 Working Season

Monthly Capacity in Tons	1946/47 Working Season	1947/48 Working Season	1948/49 Working Season
Potato Processing Quota in Tons	100,000	48,500	72,000
Percentage Utiliza- tion of Capacity			
September	-	3.6	28.9
October	84.3	97.5	100.0
November	111.67	33.2	98.1
December	99.84	67.04	65.8
January	44.73	19.1	29.3
February	37.79	2.4	18.4
March	46.55	-	11.8
April	69.12	-	-
May	8.94	-	-
June	-	-	-
Total Potatoes Processed in Tons (Second figure shows amount processed by VENAG plants)			
September	-	608	5,687
VENAG		178	470
October	14,247	16,471	20,000
VENAG	2,975	3,130	5,005
November	18,872	14,055	19,611
VENAG	2,755	2,904	5,655
December	16,103	11,329	13,167
VENAG	2,963	1,408	3,527
January	7,520	3,239	5,865
VENAG	1,289	731	1,719
February	6,418	411	3,683
VENAG	678	35	1,076
March	7,867	-	2,360
VENAG	1,682	-	781
April	11,482	-	-
VENAG	1,163	-	-
May	1,512	-	-
VENAG	139	-	-
June	-	-	-
VENAG	-	-	-

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\* Federation of People-Owned Enterprises for the Food, Beverage,  
and Tobacco Industries of Land Sachsen-Anhalt.

**CONFIDENTIAL****The Potato Starch Industry, the Potato Dehydration Industry,  
and Derivatives**

Production in this industrial branch includes:

1. potato starch
2. refined starch products and derivatives
  - a.) edible potato starch [redacted], German pudding powder
  - b.) potato sago, German "Edel" sago
  - c.) starch syrup, glucose
  - d.) dextrin
  - e.) dextrose, Dextropur
3. corn starch
4. wheat starch
5. [redacted] potato flakes
6. dextrinized potato flour
7. dried eating potatoes

The above products are manufactured in:

Item 1: in potato starch factories

Items 2, a-e: in potato starch factories with special equip-  
ment or in plants manufacturing such derivatives  
exclusively.

Item 3: in corn starch factories

Item 4: in wheat starch factories

Item 5: in [redacted] potato flakes factories

Item 6: in [redacted] potato flakes factories with milling equip-  
ment and in other plants

Item 7: in plants of the fruit and vegetable processing industry

Excluding plants for dehydration of eating potatoes, the 48 plants  
may be divided as follows:

District:	Halle	Magdeburg	Dessau	Total	Ready for operation
Potato starch factories	-	14	1	15	15
Potato starch factories with equipment for manufacturing derivatives	-	2	1	3	3
Plants manu- facturing deri- vatives exclusively					

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[Table continued on next page]

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District:	Halle	Magdeburg	Dessau	Total	Ready for Operation
Corn starch factories	-	-	2	2	2
Wheat starch factories	1	-	-	1	1
Potato flake factories	7	9	2	18	16
Potato flake factories with milling equipment	-	-	2	2	2
<del>Restricted</del> <del>potato flour</del> Mills and other installations for manufacturing dextrinized potato flour	4	5	-	9	9

The single wheat starch factory is at present working exclusively on a commission basis. Processing of corn could be undertaken at any time.

The potato starch and potato flake factories operate only during the season. Efforts are made to keep the working season down to 100 days in order to prevent unnecessary losses of costly and perishable raw materials.

Potato starch and potato flake factories processed the following amounts of potatoes:

	1946/47	1947/48	1948/49
Potato starch factories	84,000 tons	46,000 tons	72,000 tons
Potato flake factories	62,500 tons	- -	35,000 tons
<b>Total:</b>	<b>146,500 tons</b>	<b>46,000 tons</b>	<b>107,000 tons</b>

Because of a shortage of potatoes, the capacity of the potato flake industry was hardly utilized during the last two working seasons.

The demand for dextrinized potato flour, ~~which is~~ suitable for human consumption, is relatively small. However, in 1948, potato starch and its derivatives <sup>were</sup> ~~was~~ increasingly used as a consumer commodity. <sup>as</sup>

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The most important plants processing potato <sup>starch</sup> ~~and~~ corn starch, potato flakes, and derivatives in Land Sachsen-Anhalt are:

Plant	Product	Daily Potato Processing Capacity in Tons
Central German Corn Plant, Zerbst	<del>Potato starch (starch)</del> Edible potato starch <del>starch</del>	100
German Maizena Plant, Barby (Elbe)	edible potato starch flour, dextrin, dextrose, Dextropur, corn starch	no potato processing
Mieste Starch Factory	potato starch ( <del>starch</del> )	30
Potato Processing Co-operative, Gross- <del>Ap</del> penburg	potato starch ( <del>starch</del> )	75
VENAG Wolmirstedt Starch Factory	potato starch ( <del>starch</del> )	75
VENAG Genthin Starch Factory	<del>XXXXXXXXXXXXXXX (starch)</del> glucose, sago	75
Torgau Potato Flake Factory	potato flakes	75

The GDR has a total of 30 starch factories. There are no starch factories of any significance in the Western Zones.

#### THE MANUFACTURE OF POTATO STARCH (~~starch~~)

Potato starch is a gleaming white substance <sup>/containing/</sup> ~~80~~ 80 percent ~~dry~~ <sup>solid matter</sup> ~~substance~~ and 20 percent moisture.

The potato starch factory pays for potatoes ~~according~~ according to their starch content. The average starch content of eating potatoes is between 10 and 13 percent, <sup>that</sup> ~~and~~ of factory or utility potatoes, 13 percent and over. The profitability of any particular enterprise depends essentially upon the ~~starch~~ <sup>starch</sup> percentage yield and the quality of the ~~starch~~ (powder) produced. Potato starch ~~starch~~ is classified into three grades: a.) first quality, <sup>designated</sup> ~~starch~~ (~~starch~~) as superfine ~~starch~~; b.) second quality, <sup>designated</sup> ~~starch~~ as superior ~~starch~~; and c.) third quality, <sup>designated</sup> ~~starch~~ as premium ~~starch~~.

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Yield norms are set for judging the efficiency of working season operations. Performance is judged as follows:

89.5 % from potatoes of 92 % starch content is excellent  
 87.5 % " " " 89.5 % starch content is good  
 84.5 % " " " 87.5 % " " is average  
 80.0 % " " " 84.5 % " " is poor

The manufacturing process used in potato starch factories involves the following operations:

1. cleaning of the potatoes
2. grinding of the potatoes
3. washing out of the freed starch
4. extraction<sup>ing</sup> of raw starch from the thin starch paste
5. drying of the starch
6. <sup>sifting</sup> ~~sorting~~ and bagging

*insert*



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#### THE TWO-YEAR PLAN

##### Plan for 1949:

Item	Total Amount in 1,000 Tons	Value in 1,000 DM
dry starch	7.5	3,375
starch products	2.5	1,500

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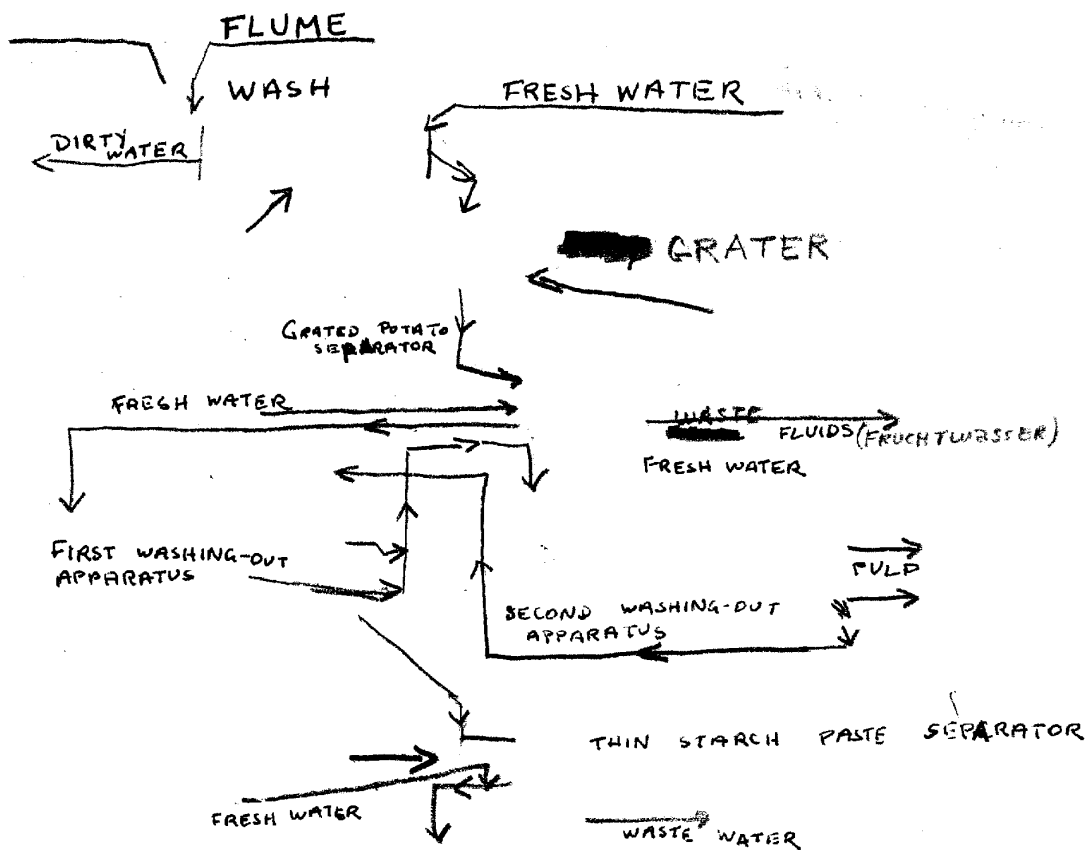
*insert* ⊕ { The cells of the potatoes are destroyed by grinding, and the yield depends considerably on how well the grinding is done. Water is added and the mash conveyed to a <sup>washing</sup> apparatus, ~~which is then washed~~. Then the mash is filtered and the thin starch paste separated from the pulp. The thin starch paste then passes <sup>over a sedimentation table</sup> through the [Flutentafel] into a Trennschleuder separator, which separates the ~~starch~~ <sup>precipitated</sup> protein from the pure starch. After this operation, the starch is ~~washed~~ in vats and, after re-washing, the remainder of the ~~starch~~ <sup>removed in</sup> fluid is ~~taken off~~ by a centrifuge. The starch paste, which is now pure, is dried in a drying apparatus, <sup>and then sifted</sup> ~~sifted~~ and bagged.

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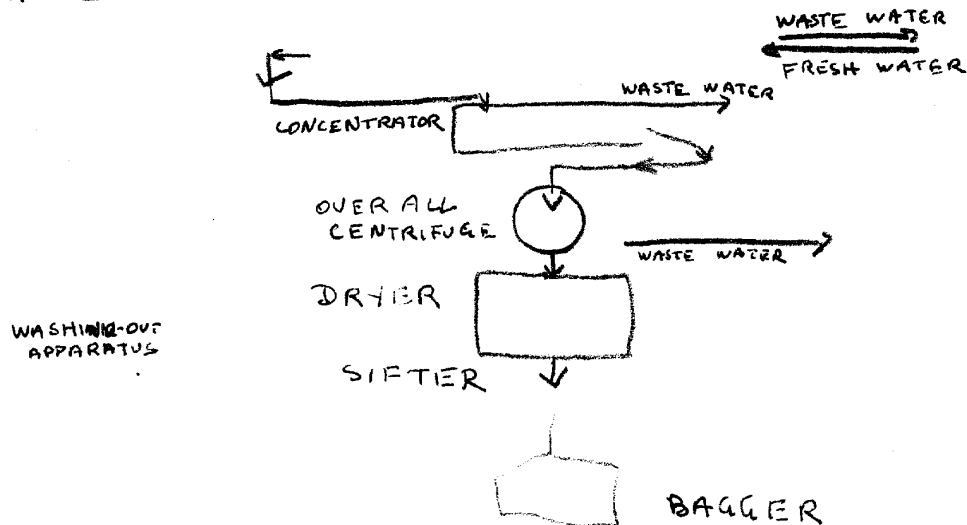
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SEDIMENTATION  
TABLE



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## REFINED STARCH PRODUCTS -- DERIVATIVES

~~XXXXXXXXXXXXXXXXXXXX~~

Derivatives are starch products which, because of different processing, vary from the original product in their qualities.

Only those derivatives which can be manufactured in Land Sachsen-Anhalt are discussed here. The manufacture of derivatives is not necessarily restricted to the actual working season.

Edible Potato Starch

Edible potato starch is the product most resembling potato starch. It is a potato starch which has been hydrolyzed by <sup>the</sup> use of acids and under action of heat up to 160° (Centigrade).

The total quarterly capacity of the Central German Corn Plant in Zerbst and the German Maizena Plant in Barby (Elbe) is 1,800 tons of edible potato starch. Whereas the former plant is in a position to manufacture edible potato starch directly from potatoes as well as from potato starch, the Maizena Plant can only process the dry starch.

Edible potato starch is used in the manufacture of pudding powders, baby foods, dry aromatic substances, etc.

Sago:

To manufacture sago ~~about~~ <sup>(paste)</sup> potato starch is pulverized, <sup>sifted,</sup> ~~filtered,~~ and then molded and dried in rotary tilt drums. The quarterly sago capacity of the Genthin VENAG Starch Factory is 500 tons. Because of its <sup>obsolete</sup> equipment, the Wolmirstedt VENAG Starch Factory has not been incorporated into the production <sup>(plan)</sup>. Sago is used for ~~the~~ <sup>preparing</sup> ~~soups~~ <sup>ing</sup> soups, cold beer or wine soups (Kaltschalen), and ~~sweetmeats~~ (desserts, etc.)

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Dextrin:

Dextrin is an adhesive manufactured from starch. It is made by heating starch with small amounts of nitric or hydrochloric acid to a temperature of 120-140°. It is classified, according to color, into three main types, white, straw-yellow, and yellow. These three types of dextrin also differ in solubility and adhesiveness. The textile, paper, printing, shoe, and building industries are among the principal users of dextrin.

Dextrin has been manufactured in Land Sachsen-Anhalt since 1 September 1948 by the German Maizena Plant in Barby (Elbe), which has a quarterly capacity of 180 tons. Potato starch in the proportion 1:1.2 is used as the raw material.

Starch Syrup -- Glucose

Starch syrup is prepared by heating an aqueous starch suspension with ~~and~~ dilute mineral acid until the desired degree of saccharification is reached. The material thus obtained is then neutralized, purified with activated carbon, and inspissated in vacuum apparatus to 43-45 Baumé.

The low sugar content, viscosity, and crystallization-retarding effect of the dextrin-like substances are indisputable advantages of this product.

In Land Sachsen-Anhalt this versatile product is manufactured by the VENAG Starch Factories in Burg and Genthin, which have a quarterly capacity of approximately 1,000 tons. During the working season starch syrup is prepared directly from potatoes, and after the season, from potato starch.

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# THE MANUFACTURE OF POTATO FLAKES AND DEXTRINIZED POTATO FLOUR

Potato flakes, made from rolled potato mash, are wafer-like and have a moisture content of not over 14 percent. To produce them, potatoes are thoroughly washed and then steamed and ground. The resulting potato mash is put through rollers which are heated by high-pressure steam. Band steel knives [strip knives] remove the dry layer from the rollers. In the cooling <sup>conveyor</sup> ~~and~~ the dry layer is broken up into thin flakes.

Potato flakes are used exclusively for forage purposes. Dextrinized potato flour is suitable for human consumption.

Dextrinized potato flour is made by grinding potato flakes from which all peelings have been removed. It is a fine, yellow-white <sup>powder</sup> with the qualities of combining well with water and of rising easily.

Dextrinized potato flour is a popular baking ingredient. The moisture content may not exceed 13 percent.

On the average, the following are obtained from potatoes:

Potato flakes in the proportion .....	5:1	→
Dextrinized potato flour in the proportion.....	6:1	
Dehydrated eating potatoes in the proportion.....	10:1	

Schematic Description of a Potato Flaking ~~Machine~~ Installation

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1. Potato scraper
2. Potato washer
3. potato elevator
4. Potato supply box
5. Supply conveyer
6. Potato scale
7. Potato conveyer
8. Potato steamer
9. Roller dryers
10. Cooling conveyer
11. Flakes elevator
12. Sieve drum
13. Flakes ventilator
14. Sacking connection
- 15..Hot steam ventilator

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**ECONOMIC SITUATION — Distilleries and Yeast Factories**  
(Fourth Quarter 1948)

	Industrial Plants				Employees				Production					
	(People-Owned SAG)	(Land Level)	Private	Cooperative	(People-Owned SAG)	(Land Level)	Private	Cooperative	(People-Owned SAG)	(Land Level)	Private	Cooperative		
Potato Distilleries	-	-	5	105	-	-	14	435	-	-	1,487 49	17,246 1,725	(hectoliter) (1,000 DM)	
Molasses Distilleries	-	9	3	-	-	348	53	-	-	59,377 2,613	7,353 324	-	(hectoliter) (1,000 DM)	
Distilleries for Cellulose Waste	-	1	-	-	-	x	-	-	-	1,396 140	-	-	(hectoliter) (1,000 DM)	
Rectifying Plants	-	1	4	-	-	35	138	-	-	10,681 1,602	34,969 5,286	-	(hectoliter) (1,000 DM)	
Baking Yeast Factories	-	1	1	-	-	180	42	-	-	519 415	130 104	-	(tons) (1,000 DM)	
Nutrient Yeast Factories	3	3	1	-	xx	-	-	-	-	178 445	116 290	37 93	-	(tons) (1,000 DM)

	Capacity				Percentage Utilization of Capacity		
	(People-Owned SAG)	(Land Level)	Private	Cooperative	People-Owned SAG	Private	Cooperative
Potato Distilleries	-	-	1,419	55,560	-	34.4	31.2
Molasses Distilleries	-	59,000	9,000	5,556	-	81.7	-
Distilleries for Cellulose Waste	-	2,596	396	-	-	-	-
Rectifying Plants	-	4,500	-	-	-	31	-
Baking Yeast Plants	-	270	-	-	-	44.5	58
Nutrient Yeast Plants	-	24,000	60,180	-	-	74.2	43.3
	-	3,600	9,270	-	-	28.8	38.7
	-	700	300	-	-	43.5	-
	-	560	240	-	-	-	-
	615	300	85	-	-	-	-
	1,538	750	212	-	-	-	-

SAG = Soviet Corporation

x = included under molasses distilleries

xx = SAG does not report personnel figures

PRODUCTION TREND -- Potato Alcohol

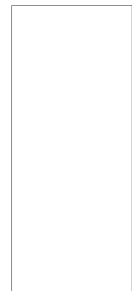
	1946				1947				1948				1949
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I
Capacity in hectoliters	56,970	56,970	56,970	56,970	56,970	56,970	56,970	56,970	56,970	56,970	56,970	56,970	56,970
Percentage Utilization of Capacity	59.82	47.19	1.06	92.00	75.06	18.59	--	26.49	9.39	0.28	--	31.13	16.65
Production Quotas in hectoliters	--	--	--	33,200	60,000	--	--	20,000	6,300	--	--	11,900	--
Production in hectoliters	34,082	26,883	606	52,412	42,764	10,590	--	15,095	5,351	157	1	17,733	9,486

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## PRODUCTION TREND -- Molasses and Wood Alcohol

	1946				1947				1948				1949
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I
Capacity in hectoliters	86,380	86,380	86,380	86,380	84,880	84,880	84,880	84,880	84,880	84,280	84,280	84,280	83,230
Percentage Utilization of Capacity	61.71	70.11	83.07	79.25	86.25	77.49	63.07	74.64	69.24	68.67	24.21	79.18	103.95
Production Quota in hectoliters	--	--	--	36,800	45,000	72,000	38,000	66,700	39,500	59,500	17,000	54,800	80,000
Production in hectoliters	53,316	60,575	71,757	68,460	73,208	65,547	53,536	63,356	58,772	57,873	20,408	68,126	86,512
a.) VENAG* and V d g B**	--	--	--	--	28,051	25,689	13,534	17,290	22,789	24,404	13,697	60,773	76,523
b.) Konsum***	--	--	--	--	--	--	--	--	--	--	--	--	--

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\* VENAG = Federation of People-Owned Enterprises of the Food, Beverage, and Tobacco Industries in Land Sachsen-Anhalt

\*\* Vd g B = Peasants' Mutual Aid Association

\*\*\* Konsum = Cooperatives

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## THE ALCOHOL INDUSTRY

Production of this industrial branch includes the manufacture of spirits (ethyl alcohol, spirit <sup>of</sup> wine, or brandy) and industrial alcohol by fermentation of sugar.

The following raw materials are used in the manufacture of crude alcohol:

- 1.) raw materials, such as wine, fruit wine, etc., which already contain spirit of wine.
- 2.) raw materials containing sugar, such as sugar cane, sugar-beets, fruit, berries, honey, sugar manufacturing residues, molasses, etc.
- 3.) raw materials containing starch, such as grain, potatoes, etc., whose starch can be transformed into sugar.
- 4.) raw materials containing cellulose, such as wood.

These raw materials are processed in:

- 1.) brandy distilleries.
- 2.) fruit and molasses distilleries.
- 3.) grain and potato distilleries.

4.) ~~Waste liquor~~ and Wood Hydroly<sup>sis</sup> Distilleries [Laugen- und Holzhydrolysat-Brennereien]

In addition, chemical plants produce synthetic spirits.

Although Hefelueftungs-Brennereien yeast distilleries naturally concentrate on the production of yeast, some alcohol is made at the same time. Rectification plants do the necessary purification <sup>of</sup> refining <sup>of</sup> the crude alcohol. In the rectifying plants the crude alcohol is separated into:

First type:	first-quality alcohol
Second type:	second-quality alcohol
Third type:	industrial alcohol

Because of the large number of plants and their capacity, the alcohol industry of Land Sachsen-Anhalt has a significance which extends beyond the

Land borders. The 238 alcohol plants are located as follows:

	Halle	Magdeburg	Dessau	Ready for operation
Potato distilleries	96	69	44	160
Molasses distilleries	5	3	4	10
Yeast distilleries	-	-	2	2
Grain distilleries	1	3	-	-
Fruit distilleries	3	3	-	1
Rectification plants	3	2	-	5

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The making of brandy by fruit and grain distilleries is forbidden.

The Freyburg Fruit Distillery, which processes marc obtained from wine-making operations of the Unstrutt Valley, is an exception. The following enterprises are permitted to manufacture alcohol: Potato and Molasses Distilleries, Wood Hydrolysis <sup>plants</sup> of the VVB (Z) <sup>(Federation of People-Owned Enterprises - Zone)</sup> Sugar Industry, Dessau Sugar Refinery, and the synthetic production installation of the Buna Works.

The operations of potato distilleries are also restricted, since only potatoes unfit for human consumption are used for making alcohol.

The following are the most important alcohol producers in Land Sachsen-Anhalt:

VVB (Z) Sugar Industry, Dessau Sugar Refinery (Molasses <del>ANEX</del> Distillery and Wood Hydrolysis)	Dessau
VENAG Molasses Processing (Molasses Distillery and Yeast Works)	Schoenebeck
VENAG Baker's Yeast Factory (Yeast distillery)	Dessau
VENAG Molasses Distillery	Koethen
Rudloff & Martz (Molasses Distillery and Yeast Factory)	Bernburg
Strohwalde Potato Distillery	Kreis Bitterfeld
Kunrau Potato Distillery	" Salzwedel
Ilberstedt Potato Distillery	" Bernburg
Isenschnibbe Potato Distillery	" Gardelegen
Oschersleben Potato Distillery	" Oschersleben
Helmsdorf Potato Distillery	" Mansfelder See
St. Burchard-Stadtgut (municipal farm)	" Halberstadt
VENAG Molasses Distillery (Molasses Distillery and Rectification Plant)	Magdeburg
Alcohol Inspection <sup>plant</sup> Utilization Station, <del>Distribution</del>	Wittenberg
Goette & Zimmermann	Halberstadt
Albert Ernst	Halle (Saale)
W. R. Clingstein	Zeitz

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The annual production <sup>under</sup> (regular distilling permit) of all agricultural and industrial distilleries amounted to 286,683.27 hectoliters in the years before the war. This pre-war level of production compared <sup>with</sup> to the production of the last few years is evidence of the significant achievements of the alcohol industry since 1945. The decline in production in the business year 1947/48 was caused by the below-average harvest of 1947.

	Business Year		
	1945/46	1946/47	1947/48
Number of plants operating after the war	164	182	111
Hectoliters of <del>crude</del> alcohol manufactured	304,271	344,098	221,013
Production as percent of <del>estimated production in comparison to</del> pre-war production, <del>in percent</del>	106 %	120 %	77 %

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## MANUFACTURE OF CRUDE ALCOHOL FROM POTATOES

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Potatoes contain starch which is transformed during processing into maltose and then alcohol.

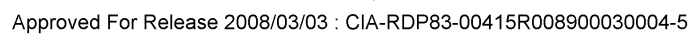
The first operation consists of steaming the potatoes under 3.5-4 atmospheres pressure. The boiled pulp is mixed with germinated barley or rye, i.e., with green ~~XXXX~~ malt. The <sup>enzyme</sup> ~~ferment~~ "Diastase" in the malt changes the starch to maltose. The sweet mash thus obtained is mixed with yeast, which contains two <sup>enzymes</sup> ~~ferments~~: Maltase, which ~~XXXX~~ transforms maltose into ~~XXXX~~ glucose, and <sup>decomposes</sup> ~~zymase~~, which ~~separates~~ the glucose into alcohol and carbonic acid.

These two reactions constitute the fermenting process. The fermented mash contains 6-8 percent alcohol, water, and other substances. The alcohol is extracted from the mash by distilling apparatus. Potato alcohol production figures <sup>are as follows:</sup> ~~follows:~~

1945/46	78,320 tons of potatoes,	only 2.3 % of the 1945 potato harvest
1946/47	104,925 tons of potatoes,	only 3.1 % of the 1946 potato harvest
1947/48	22,054 tons of potatoes,	only 1.2 % of the 1947 potato harvest

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**CONFIL****THE MANUFACTURE OF CRUDE ALCOHOL FROM MOLASSES**

Molasses, a dark-brown syrup <sup>with</sup> 40-50 percent sugar content, is a by-product of sugar manufacturing. Ingredients in the molasses which do not contain sugar -- mineral salts -- prevent a further crystallization and extraction of sugar.

The manufacturing process for <sup>producing</sup> ~~preparing~~ crude alcohol from molasses is as follows:

A certain amount of molasses is mixed with water and then heated (sterilized). Subsequently, ~~sulphuric~~ ~~sulphuric~~ sulfuric acid for acidification and phosphates and nitrates as Hefenahrstoffe nutrients yeast<sup>s</sup> are added. The mixture is cooled to 30° and more yeast is stirred in. After the yeast has propagated, more diluted molasses is added, either gradually or all at once. The fermentation process is completed during this time, the sugar <sup>decomposing</sup> ~~decomposing~~ into alcohol and carbonic acid. After the sugar is completely fermented, the mash is put into an alcohol distilling apparatus.

The molasses distilleries, which for the most part are modern plants, use column apparatus [probably vertical distillation columns] exclusively for distillation of the mash.

**Comparison of Pre-War and Post-War Alcohol Production****Molasses Alcohol:**

Annual Production	Pre-war	138,976.10 hectoliters	-- 100 %
	Business year 1945/46	225,493.	hectoliters -- 162 %
	Business year 1946/47	256,157.	hectoliters -- 185 %
	Business year 1947/48	193,419.	hectoliters -- 139 %

**Potato Alcohol:**

Annual Production	Pre-war	147,707.17 hectoliters	-- 100 %
	Business year 1945/46	79,146.	hectoliters -- 54 %
	Business year 1946/47	111,678.	hectoliters -- 75 %
	Business year 1947/48	20,604.	hectoliters -- 14 %

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## MANUFACTURE OF CRUDE ALCOHOL FROM WOOD (CELLULOSE)

/manufacturing/  
 The alcohol installation of the Dessau Sugar Refinery, a plant of the VVB (2) Sugar Industry, employs the Scholler-Torne method. Wood waste from the wood processing industry is used as the raw material for producing the alcohol. The wood waste contains 40-60 percent cellulose. By treating the wood waste with dilute sulfuric acid and by heating under pressure, sugar is obtained from the cellulose. The acid treatment and heating under pressure takes place in large steel vessels, so-called percolators. After the boiling process is over, the sugar mixture, containing sulfuric acid, is cooled, neutralized with lime, and, <sup>after</sup> ~~upon~~ being mixed with yeast and <sup>yeast nutrients</sup> ~~and yeast nutrients~~, is poured into fermenting vats. After the fermentation process is finished, the mash contains alcohol, which is extracted in distilling apparatus. Since the wort contains very little alcohol, very large and efficient column apparatuses must be used for the distillation process.

After war damage had been repaired, production of wood alcohol was undertaken again on 1 January <sup>legible</sup> [ ] 1948 at Dessau. Production in 1948 amounted to 7,932 hectoliters <sup>of</sup> crude alcohol from wood shavings.

Carbonic acid and vinasse are by-products of the alcohol industry.

The vinasse from potato processing is <sup>used</sup> ~~is~~ as forage. The vinasse from molasses distilleries, because of its high mineral <sup>ph</sup> ~~slat~~ content, is not suitable for forage purposes. It is yeasted [ ] in the Schoenebeck VENAG Molasses Processing Plant and is also used as the basic material for producing potash and fertilizers. Lignin, which is a by-product of wood alcohol manufacture, is suitable for fuel and also as a basic material for coal kindling substances.

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## RECTIFICATION

In the rectification process by-products of fermentation are separated from ~~the~~ crude alcohol. Rectification takes place in either a periodic or a continuous procedure. First-quality, second-quality, and industrial alcohol are produced. Rectification plants delivered the following percentages of total production to alcohol manufacturers:

1945/46	24.8 percent rectified alcohol
1946/47	35.5 percent rectified alcohol
1947/48	36.2 percent rectified alcohol

Excluding shipments outside the GDR, rectified alcohol was used as follows:

1946/47 (hectoliters)	(%)	1947/48 (hectoliters)	(%)	
3,986	3.8	1,684	2.0	for lacquer and paints
1,707	1.6	422	0.5	" cosmetics
5,123	4.9	4,229	5.1	" chemical industry
433	0.4	382	0.4	" laboratories
3,183	3.0	2,747	3.3	" pest control
15,475	14.8	19,561	23.4	" photochemistry
18,658	17.8	21,110	25.3	" synthetics
1,632	1.6	2,146	2.5	" acids
838	0.8	640	0.7	" perfume and essential oils
---	---	50	0.1	" crafts
5,376	5.1	2,704	3.1	" public health
439	0.4	381	0.4	" light industry
41	0.1	64	0.1	" machine building and electrical industry
135	0.1	230	0.2	" mining and metallurgy
162	0.2	100	0.1	" gas works
153	0.1	178	0.2	" washing agents
57,341	54.7	56,628	67.4	
47,500	45.3	27,200	32.6	for spirits
104,841	100.0	83,828	100.0	



THE TWO-YEAR PLAN

Plan for 1949:

Item	Amount in 1,000 <sup>hectoliters</sup> <del>tons</del>	Value in 1,000 DM
crude alcohol	320	20,800
rectified alcohol	170	25,500

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### **BAKER'S YEAST INDUSTRY**

The preparation of baker's yeast is similar to that of alcohol from molasses. By ~~large-scale~~ <sup>(vats during the fermentation)</sup> strong aeration of the fermenting process a greater yeast propagation is achieved. The sour mash goes into separators which separate the yeast "cream" from the wort. The yeast cream is pressed out, molded, and weighed.

Two yeast distilleries produce baker's yeast in Land Sachsen-Anhalt -- the VENAG Baker's Yeast Factory in Dessau and the Rudloff & Martz Yeast Factory in Bernburg. Because of war damage, the former plant could not reach its 1945 annual production level of 4,000 tons. The latter, <sup>loff</sup> Rudloff & Martz, expanded its plant sufficiently in 1945 to increase its yeast production. Temporarily, baker's yeast is also being produced by the Dessau Sugar Refinery, a plant of the VVB (Z) Sugar Industry.

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### YEAST FOODS INDUSTRY

A yeast of high protein content is the principal aim in producing yeast foods. This industry ~~is~~ <sup>relieving</sup> responsible for ~~the~~ existing <sup>shortage of</sup> protein and therefore has a particularly important function in the economy today. Molasses, molasses vinasse, and sulfite waste liquor are raw materials used in producing yeast foods. Plants utilizing these various raw materials are listed below:

a.) Molasses

VENAG Baker's Yeast Factory, Dessau  
H/dloff & Martz Yeast Factory, Bernburg  
Dessau Sugar Refinery, VVB(2) Sugar Industry  
Wolfen Paint Factory  
Leuna Chemical Works

b.) Molasses vinasse

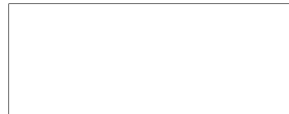
Schoenebeck VENAG Molasses Utilization Plant

c.) Sulfite waste liquor

Wolfen Film Factory

These plants supply the entire GDR with yeast foods.

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PICTURES

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1. Medium-sized rural plant, Calvoerde Starch Factory. *(lower left)*
2. Full view of modern large plant, German Maizena Works at Barby (Elbe). *(upper right)*
3. Starch centrifuges at the Central German Corn Plant in Zerbst.
4. Equipment for washing out starch at the Central German Corn Plant at Zerbst. *(top)*
5. Starch vats at the Calvoerde Starch Factory. *(bottom)*
6. Installation for preparing edible potato starch ~~starch~~ at the German Maizena Works at Barby (Elbe).
7. Dextrin roaster at the German Maizena Works at Barby (Elbe).
8. Potato roller-drier at the Anhalt Potato Flake Factory in Zerbst.
9. View of the molasses distillery and wood hydrolysis plant of the Dessau Sugar Refinery, a plant of the VVB (Z) Sugar Industry.
10. Lumber yard, sheds for wood shavings, and molasses tanks at the Dessau Sugar Refinery, a plant of the VVB (Z) Sugar Industry.
11. Modern potato distillery with column distillation apparatus at the Graefenhainichen Potato Distillery. *(left)*
12. Partial view of old potato distillery showing ~~XXXXXX~~ */distilling/* apparatus ~~XX~~ at the Klein-Weslkau Potato Distillery. *(right)*

XXXX

The following captions, 13-21, are from pictures of the Dessau Sugar Refinery, a plant of the VVB (Z) Sugar Industry.

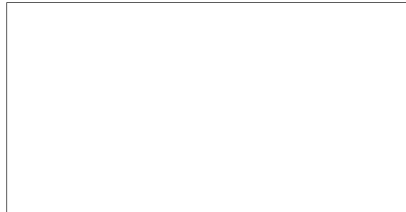
13. Four views of bomb damage at on 7 March 1945.
14. View of distillation equipment.
15. Fermentation station.
16. Wood shavings being fed into percolators. *(left)*
17. Lower part of percolators showing discharge trap. *(right)*
18. Upper part (head) of percolator. *(upper left)*
19. Let-down vessels. *(lower right)*
20. Fermentation station for yeast making.
21. Separator station.

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*Compel Action*